MODIS TEAM MEETING

Distribution:

ANDERSON, KEN	**GUENTHER, BRUCE**	**ROBERTO, MIKE**
BARNES, BILL	**JOHNSON, ERIC**	**SABATINO, RICK**
BOLTON, JOHN	KIWAK, BOB	SAFREN, HARVEY
CICCHELLI, SAL	**KNIGHT, ED**	SHEARS, LISA
CONGEDO, CHERIE	**MARTINEAU, BOB**	**SILVA, BOB**
DAELEMANS, GEORGE	MAXWELL, MARVIN	THOMPSON, LES
DAVIS, MITCH	MOCARSKY, BILL	**WALUSCHKA, GENE**
FLOREZ, JOSE	MONTGOMERY, HARRY	**WEBER, DICK**
GODDEN, GERRY	PARK, HONGWOO	
GRAZIANI, LARISSA	**PHILLIPS, HELEN**	

February 13, 1996 Attendees are marked in **BOLD** and **Underlined**

The Following items are included in this package:

1) SBRC Weekly Submission Memos form week 220
2) CDRL-521 - MODIS Weekly Status Rpt. week ending 2-16-96
3) MODIS Technical Weekly
4) MODIS Monthly Report No. 53

MODIS Technical Weekly **February 16, 1996**
sent to MODIS.Review

The next MODIS Quarterly Management Review is scheduled for Tuesday, March 26 and Wednesday, March 27 at SBRS. Ken Anderson and other project personnel will be at SBRS on Wednesday, February 20.

Bill Barnes comments on the need to know the spectral reflectance of the heliostat mirror as a function of angle and the desirability of knowing of polarization measurements at the same time. Bob Martineau provides flight model detector status and of a way to alleviate or eliminate premature saturation of the NIR FPA. Eugene Waluschka recommends filling in the gaps caused by elimination of the bright target and dark target within field stray light tests by use of a simulation (details to follow). George Daelemans mentions the tremendous ripple through the various instrument elements caused by lowering the instrument temperature. Jose Florez and Mitch Davis have comments on various expedite options for electronics testing and comments on hybrid vibration test. Bill Mocarsky has comments on various elements of the GSE.

1.0 Ken Anderson (SBRS No Longer Planning to do STR60)
Date: 2/15/96 1:52 PM
Subject: Deletion of STR60
---------- Message Contents ----------
I spoke to SBRS this morning. As of now, they are no longer intending to perform STR60 (to measure water vapor absorption). The basis for this is the schedule impact (approximately one week), and the fact that Jim Young is no longer convinced the test will, in fact, confirm his model.

Since I have received several conflicting memos regarding this test, I'll open this up for final comment. Note that if we don't decide to do anything, the test will not be performed. However, if we are going to force SBRS to do a test (and take the time and money impact to perform it), I'm going to need a very solid argument for why this test must be done, and why we can't live without it.

The clock is ticking, so if you have an issue, contact me ASAP.

Ken

2.0 Bill Barnes (Status Update on Heliostat)
Date: 2/12/96 10:20 AM
Subject: Re: Heliostat (and GSFC experiment 2nd) mirror(s)
---------- Message Contents ----------
Stuart;
Sorry to take so long in answering. I agree that we need to know the spectral reflectance of the mirror as a function of angle and that a polarization measurement at the same time

is desirable. I feel that scattering and uniformity are secondary concerns. I have talked to Jim Young and he has an idea as to how the measurements can be made, but SBRS is not anxious to do this and it will be fairly expensive if they do. I have also talked to Gene Waluschka and he says it cannot be done at GSFC and he does not know of anyone he could recommend. In the meantime, Jim has one of his guys trying to trace the origin of the mirrors. A spec and measured performance would be a great help. This, however, is probably a long shot. Do you know of anyone who could make such measurements or who may have made the mirrors in the first place?

I have been examining Park's setup, and believe, based on a suggestion from Godden, that we can eliminate the second mirror by moving (elevating) the heliostat between the two measurements. I have mentioned this to Pagano and he concurs. Otherwise, we will have to start procuring a large movable mount for the second mirror.

Thanks

Bill

---

message from Stu Biggar at U of A:
At 02:55 PM 2/1/96 -0700, you wrote:
Bill,

Today I got a call from Tom and Jim. I guess that I want to make sure that someone is given the job of measuring the characteristics of the mirror(s) to be used for the heliostat (and the Park/Guenther experiment). We need to understand the mirror transmittance at our radiometer wavelengths AND the MODIS wavelengths. We also need to know how much the transmittance changes as a function of incidence angle over the range of incidences to be used at SBRS whenever the experiment actually happens. If the angles are large (or the coatings have "interesting" features, we also need to know how polarization might affect things. We would also like to have some idea of what the scattering (BTDF) of the mirror(s) will be. Also, how is the spatial uniformity of the above across the mirror?

We (Slater's group at the UofA)cannot measure such things and the mirrors are LARGE. Who do you think should be given the job of finding out these things?

Thanks,

Stu

3.0 Bob Martineau (Flight Model Focal Plane Status; Saturation of NIR FPAs)
SUBJECT: Weekly Input for 2/13/96

1) Flight Model 1 Detective Assemblies and FPAs:

- The NIR, VIS, and SMWIR F1 FPAs have been delivered. The F1 LWIR DA completed testing, has had a filter/bezel assembly mounted, and is now in functional test. CTI is scheduled for Friday 2/16/96 with delivery to Systems Division expected 2 days later.

2) Flight Model 2 Detective FPAs:

- The F2 VIS and NIR FPAs have been delivered. The F2 LWIR DA completed radiometric testing and is awaiting a filter/bezel assembly. All pixels were operational. The filters are being mounted to the mask and the dimensions will then be measured for machining of the bezel. SBRS is looking into possibly using the bezel from the F1 filter/bezel assembly which was returned due to DMC peeling on the mask.

- The F2 SMWIR DA completed radiometric tests and is also awaiting a filter/bezel assembly. A filter/bezel build is in process. A bezel is at Speedring for machining. The filter/bezel assembly is expected Feb. 19th with CTI and delivery the first week of March.

3) Saturation of NIR FPAs:

- I spoke to Mary Ballard last week about possibly changing the rails to alleviate or eliminate the premature saturation of the NIR FPA. She left a message with Neil Therrien concerning the bias rails, but as of yesterday had not received a response. She will try again and get back to me with the results. She said each FPA is biased separately, but not each band on an FPA. Presently the FPAs are designed to operate at 0 to -8 volts, but can easily handle 0 to -9 volts bias. Power consumption would increase. It seems to me that this would be preferable to using neutral density filters as planned, since it would not reduce the S/N ratio of all bands and would not introduce an additional optical element.

4.0 Eugene Waluschka (Comment on Deletion of the Bright Target and Dark Target Within Field Stray Light tests)
Author: Eugene Waluschka at 710
Date: 2/13/96 9:18 AM
Subject: Re: Bright/Dark Target Test
Folks:

The only way to fill in the gaps in the measurements is with a good simulation. If anyone is interested I will elaborate on the subject.

Gene

_____ Reply Separator _____
Subject: Bright/Dark Target Test
Author: Mike Roberto at 420/421/422/424
Date: 2/12/96 10:33 AM

Ken, Dick, Eugene, and Ed,

SBRS is starting the process to formalize not doing the Bright Target and Dark Target Within Field Stray Light tests. Near Field Response Test will acquire data that can be used to verify compliance.

Mike

_____ Forward Header _____

Subject: Bright/Dark Target Test
Author: "Pagano, Thomas S" <tpagano@msmail3.hac.com> at Internet
Date: 2/8/96 10:18 PM

Charlene,

Can you please draft a letter for review to GSFC requesting the following:

SBRS would like to request a change to the Performance Verification Specification for the Bright Target and Dark Target Within Field Stray Light requirements verification. It is requested that SBRS verify compliance to these requirements by analysis. Rationale is that the Near Field Response Test will acquire data that can be used to verify compliance for this test. Also it is extremely difficult to configure a test to properly simulate the environment in which the requirement applies; i.e. a 21 x 21 dark target with a full #177#110#161# cloud level illumination.

We then need program office concurrence before sending out to GSFC.

Thanks

Tom

5.0 George Daelemans (Comment on Lowering MODIS Instrument Temperature)
Author: "Daelemans, George" <gdaelemans@mail724.gsfc.nasa.gov> at Internet
Date: 2/15/96

As you know, SBRS has just completed redesigning the MODIS instrument's thermal design, based on the test results of the Oct 1995 background noise check. Lowering the instrument temperature has, and will continue to have, a tremendous ripple through the various instrument elements. We at GSFC have been reanalyzing all of the design cases and sending the new predictions to SBRS however I have not seen in print any of the same information from SBRS. While I am in conversation with Ron, my reviewing of the test procedures indicates that not all of the oars at SBRS are pulling in the same direction. If you (Ken) & Dick recommend that you would like to see a comparison of the previous temperature predicts with the current design and maybe some impact

resolution from the effected REA's it might get them all talking on the page (the Blackbody as not completely thought out problem, comes to mind).

6.0 Jose Florez and Mitch Davis (Comments on Expedite Options for Electronics Testing)
Author: Jose Florez at 730
Date: 2/13/96 11:44 AM
Subject: Comments on SBRS Electronics Schedule Mitigation Plan
---------- Message Contents ----------
Mike,

Mitch and I looked over the SBRS MODIS electronics schedule "expedite options" list and have the following comments:

Since the options for the MEM, SAM, and FAM on the first sheet are the same, the following comments apply to all of them except as noted.

1) Limited temperature testing of the CCAs should be performed on one of EACH type, not one of MOST types as noted.

2) No acceptance vibration testing of the MEM is a high risk if the workmanship vibration for the wire-wrap backplane is not performed now.

3) Reduced temperature cycles at box level is not a good idea, especially if not all the CCAs are tested at CCA level.

Deferring full EMI/EMC testing to F1 is not a good idea except for those tests that are accomplished at subsystem level (such as for the Power Supply).

S/C Interface Simulation Test elimination. OK as long as there are no significant changes to the SIS from the last time the test was performed.

PC Amps Vibration Test
Author: Jose Florez at 730
Date: 2/14/96 4:33 PM
Subject: PC Amp Hybrids
---------- Message Contents ----------

Mike,

As you can see good luck is not one of the attributes that could be used to describe the MODIS development effort. I am forwarding this note to Bob Silva also in case he has not heard.

As you can see Ed Clement is asking for help to expedite the approval of the re-dressing of the leads on the five hybrids I mentioned at the team meeting. I guess that is another one for Bob.

Jose

Just a quick status note:

1. The two hybrids we sent back to Sipex to screen for damage resulting from being pulled off the cards (after they were bonded on backwards) were accidentally destroyed. The centrifuge operator thought the planning said 25,000 Gs when it actually said 2,500 Gs.

2. This leaves us one short of our pure requirement of 30 pieces. We have selected the two best of the five DPA samples we have and will be using them. This will bring us back to a total number of 31 units. The test results on these two units had not appeared that great when we were originally selecting parts, but we still believe they will be good enough. Mike Slonaker reviewed the test discrepancies on these parts and said they would be acceptable.

3. Pete Jemerson has been given an NCMR to approve touching-up the hybrid pins on the five Postamplifier hybrids we talked about on Monday (that have exposed metal). He has not agreed to sign it yet, and is saying he wants to send it back to Goddard for approval. We will start losing schedule if we can't put these on boards within the next week or so.

Ed

7.0 Bill Mocarsky (BCS/SVS Information)
Date: Mon, 22 Jan 1996 15:39:58 -0500
X-Sender: bmocarsk@pop700.gsfc.nasa.gov (Unverified)
To: Michael.Roberto.1@gsfc.nasa.gov, michael.roberto@ccmail.gsfc.nasa.gov
From: Windows Eudora User <William.L.Mocarsky.1@gsfc.nasa.gov>
Subject: GSE Telecon with Vern Alfred 1/22/96
Content-Length: 1377

Mike,
I called Vern today and got the following information:

BCS/SVS: SBRC is refinishing the interior plates of the BCS and SVS with the same anodizing material as the flight Black Body. SBRC had noticed that the "crazed" anodized material was "rubbing off" when wiped with a glove. They think that this is a result of thermal-vac cycling and perhaps a "process" problem during the original

anodizing process. NOTE The REFINISHING PROCESS IS SCHEDULED TO BE COMPLETED BY THE END OF MARCH - 2 WEEKS AFTER THE HARDWARE IS NEEDED AGAIN.

BCS: Vern is having the PRTs calibrated by having data taken at the BCS operational range.

Vern has a telecon with Martin Tuesday (today) to discuss GSE at Valley Forge. The Hughes position is:

No BTC for other than BAT testing
Rad cooler SBS may need to be redesigned for LMSC - clearance problems

The second (non-PMIR) BTC is still having trouble. Recently it was noticed that the cool down rate increased with the flow of the cryogen. The rate exceeds the max cooldown rate allowed. Vern is asking GSFC to HELP BY PROVIDING A CONTROLS PERSON/CRYOGEN PERSON to assist with problem.

SpMA will be undergoing a special "path absorption" test to characterize the SpMA's output under a non-purged environment. The intent is to see if they can get away without purging SpMA all the time.

Bill Mocarsky

MR
2/16/96